Trend Study 7-3-01

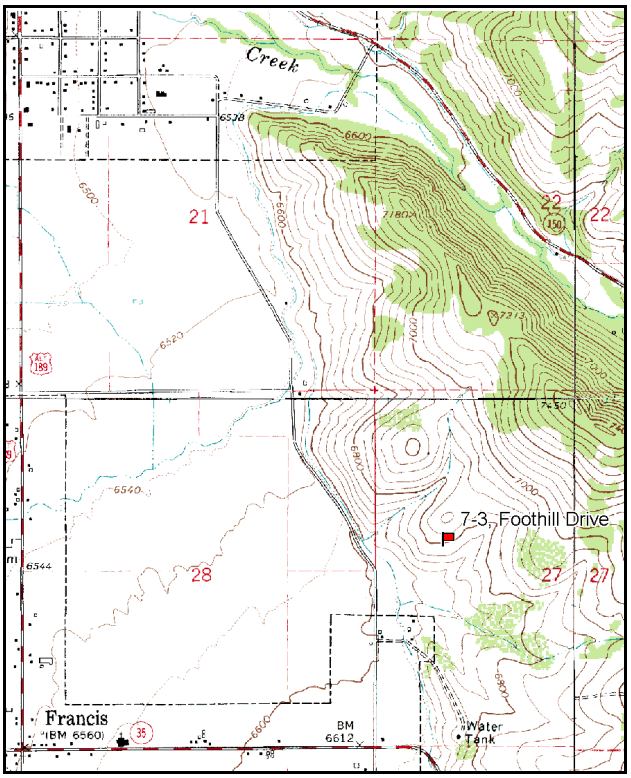
Study site name: Foothill Drive . Vegetation type: Big Sagebrush-Grass .

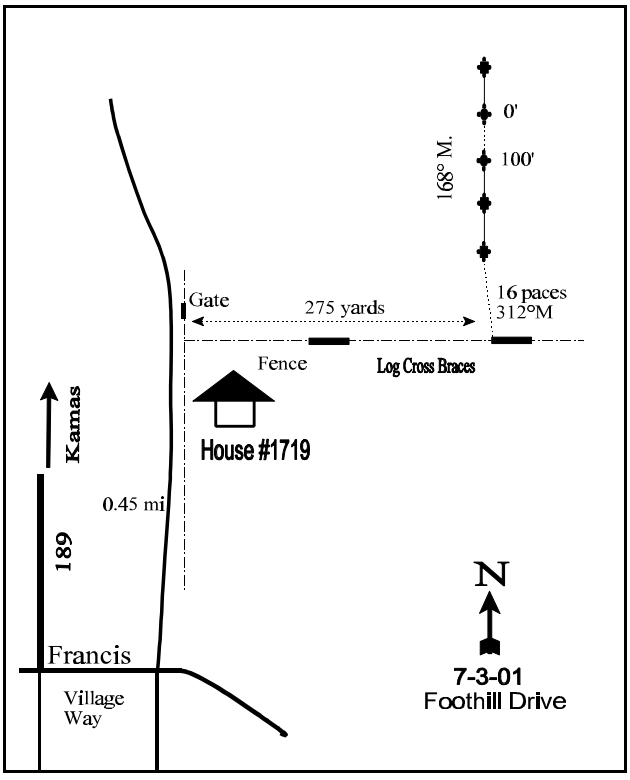
Compass bearing: frequency baseline 168 degrees magnetic.

Frequency belt placement: Line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

At the junction of 189 and Village Way in Francis, proceed east for 1.0 mile. Turn left (north) onto Foothill Drive, and proceed 0.45 miles to house #1719 on the right. Park here and walk east along the east-west running fence, just north of the house, for approximately 275 yards to the second large log cross-brace on the fence. Walk 16 paces at 312 degrees magnetic to the 300-foot baseline stake. Three hundred feet to the north at a bearing of 348 degrees magnetic is the 0-foot baseline stake. The 0-foot stake is marked by browse tag #7958. The first 300 feet of the baseline runs 168 degrees magnetic. Line 4 runs off the 0-foot baseline stake at a bearing of 348 degrees magnetic.





Map Name: Francis

Diagrammatic Sketch

Township 2S , Range 6E , Section 27

UTM 4496275 N 478254 E

DISCUSSION

Trend Study No. 7-3

The Foothill Drive study is located southeast of Kamas and north of the Provo River on critical deer winter range. This study samples an open mountain big sagebrush-grass ridge that is surrounded by adjacent ridges dominated by Gambel oakbrush. The Kamas area is dominated by intermixed communities of sagebrush-grass and Gambel oakbrush. Slope on the site is moderately steep (30%), aspect is to the southeast, and elevation is approximately 6,900 feet. Animal use during winter comes from deer and to a lesser extent elk. Domestic cattle use the area in spring and summer. The overall intensity of use has been heavy in the past and the impact of grazing and browsing animals is evident. The field crew in 1984 observed the remains of seven winter-killed deer in the immediate study area. Pellet group transect data collected from 2001, estimated 56 deer days use/acre (139 ddu/ha) on the site. Use by elk and cattle was low in 2001 at an estimated 2 elk days use/acre (5 edu/ha) and 7 cow days use/acre (16 cdu/ha).

Soils are clay loam in texture and a slightly acidic soil reaction (6.4 pH). Soil depth is quite shallow due to the abundance of rock on the soil surface and in the profile. Effective rooting depth was estimated at only 9 inches (refer to methods section) in 1996. Vegetation and litter cover are moderately good further up the slope, and coupled with the high amount of surface rock cover (37%), erosion is mostly minimal. However, protective cover at the bottom of the slope is poor where there has been noticeable trampling damage from cattle. An erosion condition class assessment showed stable soils in 2001. Bare ground is low being estimated at less than 5% in 1996 and 2001.

This area initially contained a moderately dense stand of heavily utilized and decadent mountain big sagebrush. In 1984, approximately 84% of the population was classified as heavily browsed. The level of use has steadily declined with each reading, where currently (‘01) use is mostly light. Sagebrush vigor has been generally good, except in 1984, when 33% of the population showed poor vigor. Decadence in the sagebrush population has drastically improved on this site since it was initially read in 1984. Percent decadence was estimated at 90% in 1984, decreasing to 17% in 2001. The population appears to have undergone a period of thinning during the mid-80's and early-90's due to a drier climatic cycle compared to the wet years of the early-80's. Sagebrush density has since stabilized at about 1,200 plants/acre. Annual leader growth on sagebrush averaged 2.2 inches in 2001. Sagebrush contributed 64% of the browse cover on this site in 2001.

Most of the other browse on this site consists of low value increasers including broom snakeweed, Oregon hollygrape, Woods rose, prickly pear, and dwarf rabbitbrush. A few isolated, heavily browsed serviceberry plants are also found on the site.

The herbaceous understory provides three-fourths of the total vegetation cover on the site, although composition is dominated by annuals and weeds. Cheatgrass is especially abundant as it contributes about 70% of the grass cover and one-fourth of the total vegetative cover in 1996 and 2001. Cheatgrass is spread uniformly over the site and thus poses a fire hazard, especially for the key browse, mountain big sagebrush which is not fire tolerant. Kentucky bluegrass is the most abundant perennial grass on the site, significantly increasing in nested frequency in 2001. Showy goldeneye was the most abundant perennial forb in 1996, but this species significantly decreased in 2001. Louisiana sagebrush and hairy goldaster were the most abundant perennial forbs in 2001, both significantly increasing in nested frequency. Abundant annual forbs include storksbill and willowweed.

1984 APPARENT TREND ASSESSMENT

Although some erosion is discernible in the area, it is within acceptable limits and is not a significant factor affecting the potential plant community. Soil trend appears stable. Vegetative trend on the lower portions of the site and the more favorable exposures appears down. This is part of the site that was sampled by the 1977 line intercept study. This area is quickly losing it's mountain big sagebrush component. Photo point comparisons, line intercept comparisons, and the density data all point to a continuing decline of mountain big sagebrush and a concurrent increase of herbaceous plants, especially Kentucky bluegrass and a variety of forbs. On the upper areas (i.e., above 6,800 feet) this trend is not so noticeable and deer use is markedly less. Presumably, snow depth is great enough to discourage the heavier use occurring slightly lower on the slope.

1990 TREND ASSESSMENT

This study is located on a sagebrush slope above a privately-owned pasture. Mountain big sagebrush is the key species for deer on this critical winter range. The 1984 reading found a highly decadent (90%) and apparently declining population. In 1990, although there are still dying shrubs, it appears that the sagebrush population is stabilizing. There is an abundance of sagebrush seedlings (43%), and percent decadence decreased to 45%. Use also declined to a more moderate level with improved vigor. Sagebrush cover is variable, but averages 6% across the site. One negative change since 1984 is the great increase in the density of broom snakeweed. Nested frequency of Kentucky bluegrass declined significantly with the extended drought (1987- 1990). There was an increase in nested frequency for thistle, but low fleabane, Louisiana sagebrush, and showy goldeneye also increased. The percentage of surface rock cover has increased, indicating some continued soil movement.

TREND ASSESSMENT
soil - stable (3)
browse - up (5)
herbaceous understory - stable overall (3)

1996 TREND ASSESSMENT

The soil trend is slightly up with a decrease in bare ground with almost 75% of the vegetative cover coming from herbaceous species. The major drawback is that most of the herbaceous cover is provided by “weedy species.” These species provide high amounts of fine fuel that could provide the stimulus for a destructive wildfire where all the sagebrush could be lost. The browse trend is limited to only one species, mountain big sagebrush. It has decreased significantly in density and average height, but it now appears to have stabilized with improved vigor and decreased decadence. All these parameters indicate a stable population. The herbaceous understory is made up of weedy increasers. Annuals and biennials dominate this site. Trend for perennial grasses and forbs is stable with sum of nested frequency for all perennial species remaining stable.

TREND ASSESSMENT
soil - slightly up (4)
browse - stable (3)
herbaceous understory - stable (3)

2001 TREND ASSESSMENT

Trend for soil is stable, even with a slight increase in bare ground and a decrease litter cover. Protective ground cover provided by vegetation and litter remains well disbursed and erosion is minimal. The high proportion of surface rock also helps armor the soil surface. Trend for browse is stable. Mountain big sagebrush has a stable density, percent decadence slightly decreased, and use is mostly light. The number of

young sagebrush remains stable at 10% of the population. Trend for the herbaceous understory is stable. Nested frequency of Kentucky bluegrass significantly increased, while showy goldeneye significantly decreased. Annuals are abundant.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - stable (3)

HERBACEOUS TRENDS --
Herd unit 07 , Study no: 3

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
G	Agropyron spicatum	14	17	19	15	5	9	7	7	.30	.41
G	Bromus japonicus (a)	-	-	150	123	-	-	46	48	2.35	1.10
G	Bromus tectorum (a)	-	-	298	292	-	-	88	96	10.20	10.08
G	Poa pratensis	$_{c}$138	$_{ab}$91	$_{a}$54	$_{b}$100	50	36	25	38	1.06	2.16
G	Poa secunda	48	41	59	42	24	18	25	18	1.25	.43
Total for Annual Grasses		0	0	448	415	0	0	134	144	12.55	11.19
Total for Perennial Grasses		200	149	132	157	79	63	57	63	2.61	3.00
Total for Grasses		200	149	580	572	79	63	191	207	15.17	14.20
F	Allium spp.	-	-	-	2	-	-	-	1	-	.00
F	Antennaria rosea	-	3	-	-	-	1	-	-	-	-
F	Arabis spp.	-	-	-	5	-	-	-	3	-	.01
F	Artemisia ludoviciana	$_{a}$10	$_{ab}$28	$_{b}$36	$_{c}$67	4	12	15	23	2.03	3.72
F	Aster spp.	5	-	3	-	3	-	1	-	.03	-
F	Astragalus spp.	9	-	-	2	4	-	-	1	-	.00
F	Cirsium undulatum	$_{b}$51	$_{c}$94	$_{ab}$47	$_{a}$16	30	43	20	9	1.09	1.32
F	Collomia linearis (a)	-	-	-	3	-	-	-	1	-	.00
F	Comandra pallida	3	-	-	-	1	-	-	-	-	-
F	Collinsia parviflora (a)	-	-	$_{a}$-	$_{b}$7	-	-	-	5	-	.02
F	Crepis acuminata	1	-	-	-	1	-	-	-	-	-
F	Cryptantha spp.	10	3	1	2	5	2	1	1	.00	.00
F	Descurainia pinnata (a)	-	-	-	2	-	-	-	1	-	.00
F	Draba spp. (a)	-	-	2	-	-	-	1	-	.00	-
F	Epilobium brachycarpum (a)	-	-	$_{b}$164	$_{a}$81	-	-	61	30	2.44	.41
F	Erodium cicutarium (a)	$_{a}$18	-	$_{a}$20	$_{b}$220	7	-	10	72	.27	7.85
F	Erigeron pumilus	$_{a}$-	$_{c}$37	$_{b}$11	$_{a}$-	-	18	7	-	.40	-
F	Eriogonum racemosum	9	6	9	16	4	2	5	8	.13	.60
F	Grindelia squarrosa	-	-	-	3	-	-	-	1	-	.00

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
F	Heterotheca villosa	$_{a}$-	$_{b}$15	$_{b}$31	$_{c}$55	-	8	13	23	1.60	4.15
F	Holosteum umbellatum (a)	-	-	59	41	-	-	23	17	.44	.11
F	Lactuca serriola	$_{a}$-	$_{ab}$7	$_{b}$22	$_{a}$1	-	4	9	1	.07	.00
F	Lepidium spp. (a)	-	-	$_{b}$38	$_{a}$8	-	-	18	4	.16	.07
F	Lupinus argenteus	$_{b}$15	$_{b}$12	$_{a}$-	$_{a}$-	7	8	-	-	.00	-
F	Machaeranthera canescens	2	-	-	-	2	-	-	-	-	-
F	Marrubium vulgare	-	-	-	-	-	-	-	-	-	.03
F	Phlox longifolia	-	-	-	1	-	-	-	1	-	.00
F	Polygonum douglasii (a)	-	-	17	8	-	-	9	4	.04	.07
F	Potentilla gracilis	-	-	2	2	-	-	1	1	.00	.00
F	Ranunculus testiculatus (a)	-	-	-	3	-	-	-	1	-	.00
F	Sphaeralcea grossulariaefolia	-	-	1	-	-	-	1	-	.00	-
F	Tragopogon dubius	3	2	11	9	3	2	6	4	.05	.04
F	Verbascum thapsus	-	-	5	-	-	-	2	-	.33	-
F	Viguiera multiflora	$_{a}$3	$_{b}$63	$_{c}$115	$_{a}$21	3	31	51	12	3.50	.73
Total for Annual Forbs		18	0	300	373	7	0	122	135	3.37	8.56
Total for Perennial Forbs		121	270	294	202	67	131	132	89	9.27	10.66
Total for Forbs		139	270	594	575	74	131	254	224	12.64	19.23

Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

BROWSE TRENDS --
Herd unit 07 , Study no: 3

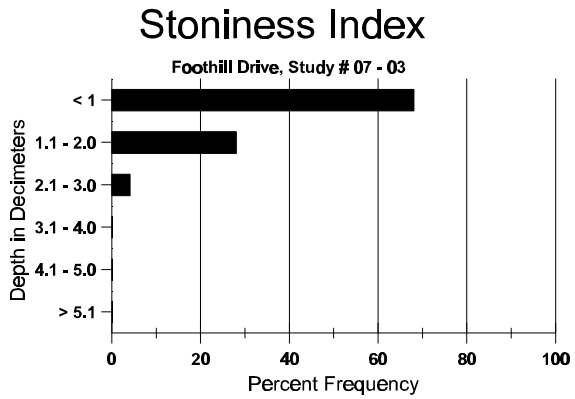
Type	Species	Strip Frequency		Average Cover %	
		'96	'01	'96	'01
B	Amelanchier alnifolia	1	2	.15	.06
B	Artemisia tridentata vaseyana	42	39	5.77	7.40
B	Chrysothamnus depressus	3	2	.03	-
B	Gutierrezia sarothrae	52	55	2.41	1.66
B	Mahonia repens	28	29	.42	1.12
B	Opuntia spp.	13	17	.21	.45
B	Rosa woodsii	6	7	.59	.81
Total for Browse		145	151	9.60	11.51

BASIC COVER --
Herd unit 07 , Study no: 3

Cover Type	Nested Frequency		Average Cover %			
	'96	'01	'84	'90	'96	'01
Vegetation	368	362	3.00	5.50	40.96	47.83
Rock	336	320	29.00	34.25	32.87	37.01
Pavement	145	161	1.00	2.50	1.21	3.64
Litter	377	360	52.50	50.50	41.41	30.40
Cryptogams	28	-	.75	.75	.31	0
Bare Ground	129	145	13.75	6.50	1.34	4.97

SOIL ANALYSIS DATA --
Herd Unit 07, Study no: 03, Foothill Drive

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
9.0	57.4 (9.8)	6.4	42.2	29.1	28.7	5.0	27.4	243.2	.6



PELLET GROUP FREQUENCY --
Herd unit 07 , Study no: 3

Type	Quadrat Frequency		Pellet Transect	
	'96	'01	Pellet Groups per Acre ⁄01	Days Use per Acre (ha) ⁄01
Rabbit	-	7	96	N/A
Deer	23	11	731	56 (139)
Cattle	7	-	78	7 (16)
Elk	-	-	26	2 (5)
Horse	-	-	9	N/A

BROWSE CHARACTERISTICS --
Herd unit 07 , Study no: 3

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Amelanchier alnifolia																		
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	1	-	-	-	-	-	-	-	1	-	-	-	33			1
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	1	-	-	-	-	-	-	-	1	-	-	-	20	19	29	1
	01	-	1	-	-	-	1	-	-	-	2	-	-	-	40	30	37	2
D	84	-	-	1	-	-	-	-	-	-	1	-	-	-	33			1
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	00%	100%	00%	+ 0%
'90	100%	00%	00%	-39%
'96	100%	00%	00%	+50%
'01	50%	50%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'84	33	Dec:		100%
'90	33			0%
'96	20			0%
'01	40			0%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia tridentata vaseyana																		
S	84	3	-	-	-	-	-	-	-	-	3	-	-	-	100			3
	90	25	-	-	-	-	-	-	-	-	25	-	-	-	833			25
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	6	-	-	-	-	-	-	-	-	6	-	-	-	200			6
	96	6	-	-	-	-	-	-	-	-	6	-	-	-	120			6
	01	6	-	-	-	-	-	-	-	-	6	-	-	-	120			6
M	84	-	1	4	-	-	-	-	-	-	5	-	-	-	166	15	13	5
	90	13	12	1	-	-	-	-	-	-	25	1	-	-	866	27	28	26
	96	27	13	1	-	-	-	-	-	-	41	-	-	-	820	18	34	41
	01	41	2	-	-	-	-	-	-	-	43	-	-	-	860	21	38	43
D	84	-	7	37	-	-	-	-	-	-	28	-	8	8	1466			44
	90	6	17	3	-	-	-	-	-	-	18	4	-	4	866			26
	96	6	6	-	-	-	-	-	-	-	12	-	-	-	240			12
	01	8	1	1	-	-	-	-	-	-	5	-	-	5	200			10
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	660			33
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	200			10

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	16%	84%	33%	+16%
'90	50%	07%	07%	-39%
'96	32%	02%	00%	+ 0%
'01	05%	02%	08%	

Total Plants/Acre (excluding Dead & Seedlings)				
'84	1632	Dec:		90%
'90	1932			45%
'96	1180			20%
'01	1180			17%

Chrysothamnus depressus																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	3	1	-	-	-	-	-	-	-	4	-	-	-	80	9	18	4
	01	2	-	-	-	-	-	-	-	-	2	-	-	-	40	-	-	2

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	00%	00%	00%	
'90	00%	00%	00%	
'96	25%	00%	00%	-50%
'01	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			
'84	0	Dec:	-
'90	0		-
'96	80		-
'01	40		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Gutierrezia sarothrae																		
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	110	-	-	-	-	-	-	-	-	110	-	-	-	3666			110
	96	9	-	-	-	-	-	-	-	-	9	-	-	-	180			9
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	33	-	-	-	-	-	-	-	-	33	-	-	-	1100	9	12	33
	90	208	-	-	-	-	-	-	-	-	208	-	-	-	6933	9	13	208
	96	209	-	-	-	-	-	-	-	-	209	-	-	-	4180	9	12	209
	01	130	-	-	-	-	-	-	-	-	130	-	-	-	2600	9	12	130
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	4	-	-	-	-	-	-	-	-	3	-	-	1	80			4
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	00%	00%	00%	+90%
'90	00%	00%	00%	-59%
'96	00%	00%	00%	-39%
'01	00%	00%	.74%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'84	1100	Dec:	0%
	'90	10599		0%
	'96	4360		0%
	'01	2680		3%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Mahonia repens																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	1	-	-	-	-	-	-	-	-	-	1	-	-	33			1
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	84	28	-	-	-	-	-	-	-	-	28	-	-	-	933			28
	90	34	-	-	-	-	-	-	-	-	11	23	-	-	1133			34
	96	18	-	-	-	-	-	-	-	-	18	-	-	-	360			18
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	4	-	-	-	-	-	-	-	-	4	-	-	-	133	4	3	4
	96	143	-	-	2	-	-	-	-	-	145	-	-	-	2900	5	8	145
	01	350	-	-	-	-	-	-	-	-	350	-	-	-	7000	3	4	350

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	00%	00%	00%	+26%
'90	00%	00%	00%	+61%
'96	00%	00%	00%	+53%
'01	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'84	933	Dec:	-
	'90	1266		-
	'96	3260		-
	'01	7000		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Opuntia spp.																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	2	-	-	-	-	-	-	-	-	2	-	-	-	66			2
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	84	3	-	-	-	-	-	-	-	-	3	-	-	-	100			3
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	01	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
M	84	8	-	-	-	-	-	-	-	-	8	-	-	-	266	4	6	8
	90	4	-	-	-	-	-	-	-	-	4	-	-	-	133	4	9	4
	96	17	-	-	-	-	-	-	-	-	17	-	-	-	340	5	11	17
	01	27	-	-	1	-	-	-	-	-	28	-	-	-	560	5	12	28
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	1	-	-	-	-	-	-	-	-	-	-	1	-	33			1
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	00%	00%	00%	-55%
'90	00%	00%	20%	+59%
'96	00%	00%	00%	+35%
'01	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'84	366	Dec:	0%
	'90	166		20%
	'96	400		5%
	'01	620		3%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Rosa woodsii																		
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	25	-	-	-	-	-	-	-	-	25	-	-	-	500			25
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	28	-	-	-	-	-	-	-	-	28	-	-	-	560	16	18	28
	01	3	48	18	-	-	-	-	-	-	69	-	-	-	1380	8	7	69
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	1	-	-	-	-	-	-	-	-	-	-	-	1	20			1
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	00%	00%	00%	
'90	00%	00%	00%	
'96	00%	00%	00%	+24%
'01	69%	26%	01%	

Total Plants/Acre (excluding Dead & Seedlings)				
'84	0	Dec:		0%
'90	0			0%
'96	1060			0%
'01	1400			1%